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INTRODUCTION

In their recent essay,[1] Kenneth G. Elzinga and David E. Mills provide a spirited critique of our proposed strategic approach to predatory pricing enforcement.[2] While we will take exception to key elements of their analysis, it is noteworthy that the authors accept the modern development in economic theory of a coherent strategic explanation of predatory pricing. Moreover, they agree that this powerful theory, developed over the last twenty years, demonstrates the rationality of predatory pricing.

Elzinga and Mills fault our proposal as moving too swiftly and decisively to implement the teachings of strategic theory in antitrust enforcement. They assert that while strategic theory has shown that predation is possible, it has not established that it is frequent. Moreover, they urge that economic theory is not sufficiently well developed to allow incorporation into antitrust rules and that the rules we do propose raise significant over-enforcement risks. We welcome the opportunity to respond to their critique to clarify the range of our disagreement, to note important points of agreement, and to explain better our reasoning on several key issues that Elzinga and Mills challenge.

In Part I, we urge that modern strategic theory is robust and provides a solid foundation for legal policy, bearing in mind the need at all times to show that the theory applies to the particular facts of the case. Part II shows that the several elements of our proposed rule, operating together, effectively distinguish between predation and competition and thereby avoid overenforcement risks. Part III examines and rejects the claim that posttrial evidence in three relatively recent cases proves that predatory pricing is rare and that a strategic approach is unnecessary.

I. ROBUSTNESS OF STRATEGIC THEORY

The striking breakthrough of strategic theory was to establish that predatory pricing can be rational economic behavior. In its recent predatory pricing decisions, the Supreme Court has relied on earlier economic theory that either

1. Kenneth G. Elzinga & David E. Mills, *Predatory Pricing and Strategic Theory*, 89 GEO. L.J. 2475 (2001).

2. Patrick Bolton, Joseph F. Brodley & Michael H. Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, 88 GEO. L.J. 2239 (2000).

denied or seriously questioned the rationality of predatory pricing.[3] To their credit, Elzinga and Mills recognize that predatory pricing has successfully identified conditions under which predation can be rational business conduct.[4] Nevertheless, they argue that strategic theory provides an inadequate basis for predatory pricing enforcement. More specifically, they assert that the theories are unsuitable for judicial use because (1) "the factual specificity of strategic theory and the sensitivity of its predictions to underlying assumptions" make it impractical if not impossible to implement these theories in court;[5] (2) the theories depend on factual assumptions that are not observable;[6] (3) the theories assume overly simple and unrealistic market structures;[7] (4) the theories ignore counterstrategies by rivals or customers that foil predation;[8] (5) even if plausible in theory, predatory pricing episodes are in fact rare;[9] and (6) in any event static price theory provides an alternative explanation for economic events—and thus (by implication) a predatory pricing policy based on price theory may be better suited for judicial application.[10]

While this appears to be a formidable litany, in fact it reflects basic misconceptions about modern economic theory and the use of such theory in policy analysis. Perhaps most fundamentally, Elzinga and Mills fail to distinguish between simplifying assumptions that make economic theories tractable and critical assumptions upon which the theories necessarily depend. As a result, they fail to understand the general applicability of powerful theories that rely on noncritical simplifying assumptions—for example, simple market structures. Second, they mistakenly claim that strategic theories of predation typically depend on facts not directly observable when in fact several of the theories are not so dependent; and even when they do depend on facts not directly observable, such facts can be established by circumstantial evidence. Third, Elzinga and Mills charge that we have failed to address counterstrategies that may foil predation, when in fact we have not only examined such strategies, but have shown that the proposed counterstrategies rest on a weaker theoretical basis than modern predatory theories. Fourth, Elzinga and Mills assert that predatory pricing is rare and improbable, without refuting either the powerful economic theory and case studies on which we rely or presenting well-founded empirical evidence of their own. Finally, they say that price theory and strategic theory are

3. *See* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 227-28 (1993); Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 588-90 (1986); Roland H. Koller II, *The Myth of Predatory Pricing: An Empirical Study*, 4 ANTITRUST L. & ECON. REV. 105, 123 (1971) (arguing that predatory pricing is a "popular myth" rather than an "economic reality"); John S. McGee, *Predatory Price Cutting: The* Standard Oil *(N.J.) Case*, 1 J.L. & ECON. 137, 138 (1958).

4. *See* Elzinga & Mills, *supra* note 1, at 2479.

5. *Id.* at 2477.

6. *Id.* at 2478.

7. *Id.*

8. *Id.* at 2477 n.17.

9. *Id.* at 2479.

10. *Id.* at 2476-77.

alternative ways of understanding economic events and that each has a comparative advantage, when in fact strategic theory is an inherent part of modern price theory and all accepted economic theories of predatory pricing are now strategic.

A. SIMPLIFYING ASSUMPTIONS VERSUS CRITICAL ASSUMPTIONS

Elzinga and Mills claim that strategic theories are "notably fragile" because the results of the economic models developed to demonstrate predatory pricing—the stable equilibria they predict—"are extremely sensitive to slight variations" in their underlying assumptions.[11] This assertion reflects a basic misconception about the methods of economic theory and the nature of formal analysis. The main purpose of formal analysis is to capture the essence of an economic situation in as simple and parsimonious a way as possible, and thereby to encompass the full range of potential applications. The best models—and the ones on which we rely—not only reveal a basic economic mechanism, but also lend themselves to application in diverse and richer settings. To be sure, any specific application may generally require an adaptation of the model to take account of the particular facts of the case. But that in no way invalidates the main results of the analysis.

Modeling of complex economic events with mathematical rigor, by its very nature, requires simplifying assumptions. However, these simplifying assumptions are not to be confused with *critical* assumptions, which cause the basic theory to unravel. Our proposed elements of proof for the main strategic theories build on the critical assumptions of these theories and ignore the simplifying and noncritical assumptions of the formal models.

For example, in financial market predation, a critical assumption is the existence of an agency or accountability problem faced by a lender in monitoring the performance of its borrower. But the details of the agency relationship are not critical. Simplifying assumptions, such as uniform lending terms that fail to reflect different shadings of the basic agency relationship between borrower and lender, do not eliminate the agency problem. Thus, our proposed elements of proof for financial predation test for the presence of the *critical* assumptions of the theory. These include the prey's dependence on external financing and the resulting dependence of such financing on the prey's initial performance.[12] It is not a weakness but a strength of the theory that these assumptions will encompass a range of factual situations in which the variations in financing terms do not alter the conclusions of the theory. Elzinga and Mills fail to show that strategic theories are fragile in their reliance on critical assumptions.

A related critique is the sometimes voiced concern that strategic theory may leave policy applications in doubt when the parsimony of the models leads to

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11. *Id.* at 2478.

12. *See infra* Appendix (stating elements of proof for each predatory strategy relied on in our earlier article).

multiple stable outcomes or equilibria. This criticism, first made in the context of cost-signaling (or limit-pricing) theory,[13] claims that cost-signaling may result in many signaling equilibria, some of which involve quite different and nonpredatory strategies. Faced with this plethora of equilibria some commentators have argued that this type of signaling theory provides no clear guidance for policy.[14] This criticism is exaggerated because, in any specific case, the facts may only be consistent with a single equilibrium.[15] Concretely, if the facts establish that the predator sold below cost pursuant to a scheme of predation and that this resulted in exclusion of the prey and probable recoupment, it is irrelevant that in theory an efficient cost-signaling equilibrium is possible under a different set of industry facts. By insisting that the predatory scheme be supported by factual evidence, we have thus addressed the problem of possible multiple equilibria. That is to say, the factual evidence in the case eliminates the other theoretically possible equilibria as probable outcomes. Our approach is consistent with the Supreme Court's decision in *Eastman Kodak Co. v. Image Technical Services, Inc.*,[16] which emphasizes the primacy of factual evidence in applying economic theory.[17]

Thus, recognition of the distinction between simplifying assumptions and critical assumptions compels the conclusion that the main predatory theories are not fragile, but robust, and apply to a variety of factual conditions within the theory's basic parameters. At the same time any particular application of the theory requires a showing that industry facts fit the theory—as we recognize, emphasize, and illustrate throughout.

B. UNOBSERVABLE FACTS VERSUS CIRCUMSTANTIAL EVIDENCE

Elzinga and Mills assert that strategic theories are deficient in their reliance on facts not directly observable to prove either asymmetric information or asymmetric access to financial resources, which they claim to be the "foundational assumption upon which most strategic theories of predation rest."[18] This objection falls short for several reasons: To begin with, many information-based theories do not require an assumption that the predator has an information advantage.[19] Second, while proof that a predator has a financial advantage is required in financial market predation, the proof need not rest on unobservable facts. Third, even as to those theories that do require

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13. *See* Paul Milgrom & John Roberts, *Predation, Reputation, and Entry Deterrence*, 27 J. ECON. THEORY 280, 302-03 (1982).

14. *See, e.g.*, JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 372-73 (1988).

15. *Id.* at 372 (stating that "intimate knowledge" about industry needed to draw "definite conclusions" about cost-signaling).

16. 504 U.S. 451 (1992)

17. *Id.* at 466-67.

18. Elzinga & Mills, *supra* note 1, at 2477.

19. In fact, Elzinga and Mills acknowledge that "[n]ot all recent theories of predatory pricing assume asymmetric information or asymmetric resources." *Id.* at 2478 n.18 (citing the Cabral and Riordan analysis of learning curve predation in Luis M.B. Cabral & Michael H. Riordan, *The Learning Curve, Predation, Antitrust, and Economic Welfare*, 45 J. INDUS. ECON. 155, 157 (1997)).

that the predator have an information advantage, our proposed rule allows proof to be based on objectively rooted circumstantial evidence—a type of proof frequently utilized in law, including antitrust law.

Predatory theories that assume no information advantage by the predator include test market predation,[20] financial market predation,[21] learning curve predation,[22] and sunk-cost commitment predation.[23] In test market predation, for example, the predatory strategy aims to distort the test market's response to entry of a new brand or firm into one of the predator's existing markets. But test market predation does not require that the predator have an information advantage over the prey. The only informational requirements for the test market strategy are that the prey lacks complete information about demand in the predator's market and that valuable information can be obtained from a market test.[24]

In financial market predation, the agency problem that makes predation possible is the inability of a bank or financier to reliably observe the managerial performance of the prey's managers—a proposition well accepted in financial literature. But under our proposal, proof of financial predation does not require the court to make this determination. Instead, the proof need only show that the prey depends on external financing and that such financing in turn depends on the prey's initial performance, such as its ability to meet its loan commitments.[25] These and the other elements of proof required for a strategy of financial predation can rest on objective financial records.

The only theories that depend on facts not directly observable to prove information asymmetry are reputation effect and cost-signaling. Reputation effect requires that the prey knows less than the predator about the predator's strategy, and cost-signaling requires a similar asymmetry in the prey's knowledge of the predator's costs. Facts relating to knowledge or belief pose difficulties for legal proof because they are subjective and hence inherently unreliable. To avoid dependence on such evidence, our proposal would rely on the standard of what is known or perceived by a rational firm in the industry—which removes the problem of bias that makes reflective testimony by a litigation party inherently unreliable. Moreover, the law has long accommodated this kind of proof. Thus, the standard of care in tort law is based on what precautions a reasonable person would take under the circumstances.[26] Proof of facts by

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20. For a brief exposition of test market predation, see Bolton, Brodley & Riordan, *supra* note 2, at 2311-13.

21. For a discussion of financial market predation, see *id.* at 2285-90.

22. *See* Cabral & Riordan, *supra* note 19, at 156.

23. TIROLE, *supra* note 14, at 314-20.

24. Bolton, Brodley & Riordan, *supra* note 2, at 2311-13. Of course, information asymmetry might in fact exist if the predator knows more about the test market's likely response than the prey does, but the cost-signaling strategy does not require such asymmetry. The strategy works if the predator and prey are equally ignorant about test market response.

25. *See id.* at 2290-91; *infra* Appendix (Financial Market Predation elements (1) & (2)).

26. *See, e.g.*, W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS 174 (5th ed. 1984).

indirect or circumstantial evidence is commonplace in antitrust law. Price-fixing conspiracies, for which direct evidence is rarely available, are frequently—if not typically—proven by circumstantial evidence.[27] Proof of intent in attempt-to-monopolize cases may also rest on circumstantial evidence, such as pricing below cost.[28]

Nevertheless, in cases in which an unobservable condition is crucial for the plausibility of a strategic theory, we would generally agree that a high burden should be placed on the plaintiff to prove this condition by circumstantial evidence (and would give little weight to purely subjective or self-reflective evidence).[29] Consistent with our emphasis that strategic theories must be supported factually, the court must conduct a careful and systematic evaluation of the circumstantial evidence relating to any condition not directly observable to determine the plausibility of the relevant predatory theory.

C. SIMPLE MARKET STRUCTURES

Elzinga and Mills assert that strategic theories rely on overly simple market structures that do not reflect market realities.[30] Under such theories the predator is either a monopoly facing a single potential entrant or the dominant firm in a duopoly. They claim that as a result the theories are not relevant to real world cases, which "almost always arise in oligopoly markets."[31] In addition, Elzinga and Mills argue that entry and reentry are usually "assumed away."[32] Thus, the authors conclude that strategic theories of predatory pricing are not a "good fit" for the markets in which predation typically occurs.[33]

We challenge each of these assertions. To begin with, Elzinga and Mills offer no support for their claim that predatory pricing cases almost always arise in oligopoly markets.[34] Indeed, the assertion appears inconsistent with the cases unless oligopoly is defined broadly to include any market in which a dominant firm faces more than a single rival—a definition at odds with economic usage. Accordingly, we put this claim to one side and discuss their more general claim that the assumptions of the predatory pricing models are not sufficiently realistic.

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27. *See* Interstate Circuit, Inc. v. United States, 306 U.S. 208, 221 (1939) (recognizing that price-fixing agreement may be established by "inferences drawn from the course of conduct of the alleged conspirators"); LAWRENCE A. SULLIVAN & WARREN S. GRIMES, THE LAW OF ANTITRUST: AN INTEGRATED HANDBOOK § 5.2b, at 179-84 (2000).

28. *See* Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 232 (1st Cir. 1983); AM. BAR ASS'N, ANTITRUST LAW DEVELOPMENTS 295 (4th ed. 1997) (noting that specific intent can be proved by inference from conduct evidence).

29. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2321 n.360.

30. Elzinga & Mills, *supra* note 1, at 2478.

31. *Id.*

32. *Id.*

33. *Id.*

34. In fact, Elzinga and Mills have identified a case involving a duopoly market where they find the facts consistent with predation. *See* Kenneth G. Elzinga & David E. Mills, *Testing for Predation: Is Recoupment Feasible?*, 34 ANTITRUST BULL. 869, 889-93 (1989) (citing D&S Redi-Mix v. Sierra Redi-Mix & Contracting Co., 692 F.2d 1245 (9th Cir. 1982)).

The claim that strategic theory provides no useful policy guidance because it often models simple market structures reflects a further misconception of modern theory. As discussed earlier, rigorous economic theories strive to capture the essence of the economic problem in the simplest possible way so as to best understand its dynamic. Consistent with *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*[35] and other recent decisions, our elements of proof require that the predator have market power. Thus, in single firm predation the predator would typically be a dominant firm. While for simplicity of exposition predatory theories usually analyze a two-firm market, consisting of the predator and the prey, the same analysis extends to a dominant firm facing several smaller rivals.

For example, when a dominant firm engages in predation against a smaller rival and also faces competition from a group of smaller rivals who behave noncollusively, the dominant firm, utilizing market power, can recoup the losses it incurs in the price war just as in a two-firm market. The only difference is that the demand segment over which the dominant firm can exercise market power is the remaining or residual demand left after excluding or subtracting the supply of the competitive fringe.[36] Thus, the analysis of the two-firm market applies without modification to the segment of the market not served by the competitive fringe. Known as the dominant firm model, the analysis has also been adapted to predatory pricing by a dominant firm against multiple (smaller) rivals.[37] Therefore, the two-firm model provides a simpler but still accurate economic picture of predation by a dominant firm facing several smaller rivals.

The dominant firm model might also be a good fit when local competition involves a dominant firm and several smaller rivals, even if no firm is dominant at the national level. This is illustrated in studies of localized price-cutting in retail sales[38] and predatory pricing in the airline industry and at hub airports.[39] Finally, the challenging problem of predatory pricing by jointly acting firms within a dominant oligopoly has also been analyzed in the economic literature. While a predatory pricing strategy by an oligopoly may be partially undermined by free riding, it can still be profitable.[40] As a result, some or all members of the

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35. 509 U.S. 209 (1993).

36. *See* F.M. SCHERER & DAVID ROSS, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 224-26, 233 (3d ed. 1990) (discussing the dominant firm model).

37. *See generally* Drew Fudenberg & David M. Kreps, *Reputation in the Simultaneous Play of Multiple Opponents*, 54 REV. ECON. STUD. 541 (1987) (presenting model of one incumbent facing multiple, simultaneous entrants).

38. *See* Judith A. Chevalier, *Capital Structure and Product-Market Competition: Empirical Evidence from the Supermarket Industry*, 85 AM. ECON. REV. 415, 416 (1995); Judith A. Chevalier, *Do LBO Supermarkets Charge More? An Empirical Analysis of the Effects of LBOs on Supermarket Pricing*, 50 J. FIN. 1095, 1097-99 (1995).

39. *See* Ken Hendricks et al., *Entry and Exit in Hub-Spoke Networks*, 28 RAND J. ECON. 291, 300-01 (1997).

40. *Cf.* Kyle Bagwell & Garey Ramey, *Oligopoly Limit Pricing*, 22 RAND J. ECON. 155, 165-67 (1991); B. Douglas Bernheim, *Strategic Deterrence of Sequential Entry into an Industry*, 15 RAND J.

oligopoly may have an incentive to adopt aggressive policies, such as below-cost pricing, that contribute to the foreclosure of new entrants.

D. COUNTERSTRATEGIES

A frequently voiced criticism, which Elzinga and Mills reiterate,[41] is that strategic theory overlooks counterstrategies by rivals and customers. As Elzinga and Mills have apparently failed to note, we discuss these counterstrategies at length in our previous article.[42] In particular, we point out that the counterstrategy critique stands on a weaker ground than the economic analysis on which we rely, because unlike strategic theories of predatory pricing, counterstrategy arguments are not based on a systematic formal equilibrium analysis.[43] Such an analysis is rigorous because it takes into account all moves and countermoves of the predator, prey, and any other participants in the predatory interaction. Thus, formal modeling of strategic theories guarantees that they are internally consistent under the assumptions of the model. It does not appear that the counterstrategies critique meets this standard. In any case, our proposed approach to predatory pricing allows a defendant to advance arguments and evidence that the alleged predation strategy is implausible in light of counterstrategies.

E. FREQUENCY OF PREDATION

Elzinga and Mills repeatedly argue that the infrequency of predatory pricing removes the need for a strategic approach to predatory pricing. They assert that predation is highly improbable economic behavior and, accordingly, that the use of strategic analysis in predatory pricing enforcement will deter procompetitive price-cutting.[44] Yet they present no convincing evidence or analysis to support these conclusions and do not refute the powerful economic theory and convincing case studies on which we rely in our earlier article.

As discussed, Elzinga and Mills recognize that predatory pricing can be rational conduct under what they acknowledge are "coherent and rigorous" modern economic theories.[45] This recognition stands in sharp contrast to some of the earlier economic writing on which the Supreme Court and many commentators have relied that either denied the rationality of predatory pricing[46] or intimated that it was so readily foiled by counterstrategies as to be exceedingly

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ECON. 1, 1-4 (1984); Richard Gilbert & Xavier Vives, *Entry Deterrence and the Free Rider Problem*, 53 REV. ECON. STUD. 71, 81 (1986); Michael H. Riordan & Richard P. McLean, *Industry Structure with Sequential Technology Choice*, 47 J. ECON. THEORY 1, 1-3 (1989); Michael Waldman, *Noncooperative Entry Deterrence, Uncertainty and the Free Rider Problem*, 54 REV. ECON. STUD. 301, 301-02 (1987).

41. Elzinga & Mills, *supra* note 1, at 2477 n.17.
42. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2321-26.
43. *See id.* at 2322 n.364.
44. Elzinga & Mills, *supra* note 1, at 2494.
45. *Id.* at 2480.
46. *See* Koller, *supra* note 3, at 105; McGee, *supra* note 3, at 143.

unlikely in any real world setting.[47] Thus, to the extent that the rarity-of-predation viewpoint rests on the belief that predation is irrational, Elzinga and Mills appear to agree that this foundational support has been removed.[48]

To be sure, Elzinga and Mills limit their rationality concession by stating that while "predatory pricing has arisen in special circumstances, . . . it is not a commonplace occurrence."[49] We agree that predatory pricing arises under special circumstances. Indeed, the "special circumstances" are the conditions required by the relevant economic theory, and we have built these conditions into our proposed legal rule. We agree also that predatory pricing is not commonplace, as is true for most other types of antitrust violations involving exclusionary conduct.

Indeed, to say that predatory pricing is infrequent is almost a truism because obviously it comprises only a small fraction of pricing transactions. It is an open question, however, whether in the light of modern economic theory, predatory pricing is infrequent as compared with the incidence of other types of exclusionary conduct or anticompetitive mergers. No more than approximately one percent of U.S. merger transactions in the 1990s have been challenged on anticompetitive grounds, but it scarcely follows that merger enforcement should be abandoned or drastically reduced because of the presumed low incidence of anticompetitive mergers.[50] The only support that Elzinga and Mills offer for their view of the infrequency of predation are (1) a quotation from the *Matsushita* case that an economic consensus holds that predatory pricing is "rarely tried, and even more rarely successful"[51] and (2) an ex post review by the authors of three predatory pricing cases, which they discuss in Part IV of their essay.[52] But the support to be drawn from these sources is slender indeed.

The Supreme Court's language in *Matsushita*, which is cited in *Brooke Group*, regarding the economic consensus on the infrequency of predation rests exclusively on economic work that has been displaced by modern analysis, which itself has become the consensus viewpoint. In these decisions the Supreme Court appeared unaware of the modern development, which is hardly surprising, because it was not briefed to the Court.

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47. *See* Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263, 269 (1981).

48. It logically follows that once recognition of the rationality of predatory pricing makes predation an accepted possibility, its general likelihood increases. Recognition of the rationality of predatory pricing raises its "prior probability," and an increase in the prior probability of an event raises the final probability that it can occur, other factors remaining unchanged. *See* MORRIS DEGROOT, PROBABILITY AND STATISTICS 64-70 (2d ed. 1986).

49. Elzinga & Mills, *supra* note 1, at 2479.

50. *See* Carl Shapiro, *Trusting the Antitrust Police*, FIN. TIMES (London), Sept. 6, 2000, at 23. Similarly, successful antitrust claims based on fraudulent procurement of a patent are rare, *see* Peter J. Weid, Note, *Patently Unfair: State Unfair Competition Laws and Patent Enforcement*, 12 HARV. J.L. & TECH. 469, 476-77 nn.52-53 (1999), but that does not mean antitrust enforcement against fraudulently obtained patents should be abandoned.

51. Elzinga & Mills, *supra* note 1, at 2476 n.12 (quoting Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 589 (1986)).

52. *See id.* at 2485-93.

The only other support Elzinga and Mills offer for their claim that predation is rare is based on their review of postdecision factual developments in three relatively recent judicial decisions.[53] Based on a limited factual study apparently prepared to support their critique of our article, Elzinga and Mills conclude that the three decisions, in each of which the defendants prevailed, were correctly decided—and from this they appear to argue that predatory pricing is therefore rare and improbable. In Part III of this response we examine the incompleteness of their factual analysis of these cases and the limitation of their method of sample selection for the case studies. But even if the courts correctly rejected predatory pricing allegations in these decisions, which do not mention modern strategic theories, this scarcely demonstrates that predatory pricing is rare and improbable behavior.

Most striking, however, is Elzinga and Mills's failure to discuss or even mention evidence and analysis we offered in our previous article on the frequency of predatory pricing. This included empirical studies and a critique of earlier studies on which the Supreme Court and commentators have based their assertions that predation is rare.[54] Thus, we rely on a number of empirical case studies by economic historians and empiricists that reveal striking instances of predatory pricing, ranging from the old Sugar Trust to modern Canadian supermarket chains.[55] Several of these studies have used powerful econometric techniques and have probed deeply into historical archives. By contrast, earlier studies claiming to show the infrequency of predation used more impressionistic methods. The most influential of these prior studies analyzes the facts of cases litigated during an era when the legal rule was so sweeping and overinclusive as to almost surely have deterred most actual predatory pricing attempts.[56]

Finally, even if it be assumed that predatory pricing is rare, that scarcely means it should be ignored, unless the risks of false convictions are so high as to outweigh any benefits of deterring predatory pricing. It is precisely to offset such false conviction risks that we have proposed our five-step legal approach, which includes screening tests that would allow dismissal of cases before trial, and a fully developed efficiencies defense that recognizes dynamic as well as static efficiencies. Taken together, these precautions do much to reduce the possible risks of false convictions.

F. PRICE THEORY AND STRATEGIC THEORY

Elzinga and Mills appear to suggest that the earlier Chicago School "price theory" and modern strategic analysis are alternative ways of examining economic events when they write that "[e]conomists use both of them to under-

53. *Id.*
54. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2243-49.
55. *See id.* at 2244-46.
56. *See id.* at 2247.

stand economic events and business practices, although some events and practices are better understood using one instead of the other."[57] This is another misconception. What we refer to as "strategic theory" is simply modern price theory, which incorporates game theory as an intrinsic part. This theory is what is nowadays taught in all university economics departments, including the University of Chicago's. There is no sense in which modern price theory and strategic theory are competing theories, and we cannot think of any event or practice that is better understood using early and now outdated "price theory."

The early "price theory" that Elzinga and Mills favor is essentially static in nature.[58] Static theory is ill-equipped to handle inherently dynamic strategic interactions like predatory pricing. As a result, earlier analyses of predatory pricing were often loose-fitting. Indeed, Elzinga and Mills acknowledge that an economic consensus now holds that strategic theories of predatory pricing are "coherent and rigorous . . . honed to precision . . . [and] painstakingly constructed."[59] Unfortunately, however, legal applications remain often based on the earlier price theory—as in *Brooke Group* and in McGee's writing—and thus the law and much legal writing lags the economic consensus.

II. IMPLEMENTING STRATEGIC THEORY

Elzinga and Mills claim that our proposed legal rule cannot differentiate between predation and legitimate competition.[60] They attempt to show this by faulting our proposal in several particulars. But the partial nature of their challenge is striking. They appear to accept key elements of our approach, and most of what they object to is not essential to its implementation. This is not to say that the challenged parts of our proposal are not keenly desirable, as they would strengthen the accuracy of the legal rule. We explain below why Elzinga and Mills's objections—partial though they may be—provide no convincing basis for not fully implementing our proposed approach, and we identify several important areas in which they appear to accept our view.

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57. Elzinga & Mills, *supra* note 1, at 2476.

58. *See* Oliver E. Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 YALE L.J. 284, 284 (1977) (noting that "the familiar tools of static economic analysis are ill-suited to cope with the issues posed by predatory pricing"); *cf.* Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925 (1979), *reprinted in* ANTITRUST LAW AND ECONOMICS 17, 31 (Oliver E. Williamson ed., 1979) ("Since classical (or, one might add, modern) economics [as of 1979] contains no generally accepted theory of strategic behavior, it is not surprising that the Chicago school should not have been particularly concerned with predatory pricing. Eliminate strategic considerations, and it becomes impossible to construct a rational motivation for predatory pricing without assuming (very uncongenially to a Chicagoan) asymmetric access to the capital markets for a period of below-cost selling. But to ignore strategic considerations is not satisfactory.").

59. Elzinga & Mills, *supra* note 1, at 2480. Indeed, when they attempted to formulate their own theory of dynamic equilibrium pricing in the presence of switching costs, following entry, Elzinga and Mills also use the analytical tools of strategic theory. *See* Kenneth G. Elzinga & David E. Mills, *Price Wars Triggered by Entry*, 17 INT'L J. INDUS. ORG. 179, 183-89 (1999) (describing how incumbent acts as strategic agent in two-period model).

60. *See* Elzinga & Mills, *supra* note 1, at 2482.

A. FACILITATING MARKET STRUCTURE

Elzinga and Mills accept our proposed market structure screen and its three basic parameters of high market share, entry barriers, and reentry barriers, and they also appear to accept the possibility that a reputation for successful predation can deter entry.[61] They take issue with the idea that a rebuttable presumption of entry and reentry barriers is warranted by evidence that the alleged predator is able to raise prices significantly after the prey's exit without inducing entry or reentry. Elzinga and Mills object that when an incumbent firm in a concentrated market cuts price in response to entry, the subsequent exit of a rival without further entry may only show the incumbent's lower costs.[62] Elzinga and Mills further object that when a case involves reputation effect predation, the issue of entry barriers should be analyzed not under the facilitating market structure element, but under the scheme-of-predation and supporting evidence element.[63]

Elzinga and Mills are mistaken in suggesting that we would infer reputation effect predation from the mere ability to raise prices after the exit of a rival. A presumption of market power based on postexit conduct does not establish predatory pricing under our proposal, but only shows that the structure of the market would facilitate a predatory strategy. Under our proposal, a facilitating market structure, presumed or otherwise, is but one of several necessary elements. Proof of a facilitating market structure is necessary because without it the alleged predator lacks the market power to recoup its investment in predatory pricing. Thus, under *Brooke Group*, the absence of market power allows the court to dismiss the case without further inquiry.[64]

While reputation effect is indeed relevant under the scheme-of-predation element—as well as under the probable recoupment element—it must also be included in the threshold market-structure analysis. As just mentioned, absence of a facilitating market structure is grounds for dismissal under current case law. Because reputation barriers may be present when other entry barriers are absent, legitimate cases of predation would be dismissed incorrectly if courts failed to consider reputation as an indicator of a facilitating market structure.[65] A presumption of market power based on a sustainable postexit price increase also draws support from general antitrust law because, as noted in our previous article, evidence of anticompetitive effects can establish market power.[66]

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61. *See id.* at 2480.

62. *See id.* While the raising of price without inducement of new entry may show that the incumbent has lower costs, it may equally show presence of a predatory strategy. In either event, the facts justify a presumption of entry barriers—a structural condition for predatory pricing.

63. *See id.*

64. *See* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 231-32 (1993).

65. *See* LOUIS PHLIPS, COMPETITION POLICY: A GAME-THEORETIC PERSPECTIVE 206-15, 220-21 (1995); Bolton. Brodley & Riordan, *supra* note 2, at 2304-10 (describing likely raising of entry barriers through reputation effect in early days of Bell System).

66. At least under section 1 of the Sherman Act. *See* Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 463-68 (1992); NCAA v. Bd. of Regents of Univ. of Okla., 468 U.S. 85, 109, 120

Recognizing reputation effect as an entry barrier and allowing a rebuttable presumption of entry barriers based on evidence of anticompetitive effects would close an important gap in the proof of market power in predatory pricing cases, but neither step is essential to the viability of our proposed approach. Our five-element proposal remains valid and effective even if courts were to reject these specifics and limit proof of a facilitating market structure to traditional evidence of concentration ratios, entry barriers, and reentry barriers. However, we believe that this narrower application of our approach would be underinclusive in identifying predatory pricing.

B. SCHEME OF PREDATION AND SUPPORTING EVIDENCE

Elzinga and Mills acknowledge that in proving the existence of a predatory pricing scheme, as required under our second element, strategic theory holds much promise for antitrust litigation.[67] Indeed, as mentioned earlier, they commend the theories on which we rely as "coherent and rigorous . . . honed to precision . . . [and] painstakingly constructed."[68] This candid acknowledgment implicitly recognizes that predatory pricing policy deals with plausible economic behavior and not isolated episodes of crazy or vindictive action. The identification and evaluation of evidence that supports a coherent theory of predation is a central element of our proposed legal framework.

Elzinga and Mills nevertheless fault our legal development in two basic respects. First, Elzinga and Mills object that we fail to identify the "marks" or criteria that would distinguish predatory from competitive pricing, but instead invite courts to presume predation from facts that bear only a "fuzzy resemblance" to the conditions specified in economic theory.[69] Second, the authors argue that we make unjustified information assumptions that an incumbent always knows more than the entrant or the prey.[70]

1. Distinguishing Predation from Competition

The basic problem Elzinga and Mills have in understanding how our proposed approach would distinguish predation from competition is their tendency to focus on each element of proof in isolation. Thus, under our analysis, proof of a scheme of predation establishes only that the identified strategy is *plausible* under the facts of the case. It is only through the use of additional criteria that courts can distinguish predation from competition. Therefore, no legal liability follows from a mere determination that a defendant's conduct is plausibly

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(1984); Rebel Oil Co. v. Atl. Richfield Co., 51 F.3d 1421, 1434 (9th Cir. 1995); 7 PHILLIP E. AREEDA, ANTITRUST LAW ¶ 1511, at 427 (1986); *cf.* FTC v. Ind. Fed'n of Dentists, 476 U.S. 447, 460-62 (1986) (noting that evidence of ability to systematically distort market information can injure competition and thus evidence market power).

67. *See* Elzinga & Mills, *supra* note 1, at 2480.

68. *Id.*

69. *Id.* at 2480-81.

70. *Id.* at 2482.

consistent with an economically accepted predatory strategy. The court must also determine whether the defendant has sold below cost, whether the defendant has the capability to recoup, and whether—after all the other elements are present—the defendant can offer a convincing business justification for its conduct.[71] Examining these elements, the court or an enforcement agency then resolves which is the more persuasive explanation for the below-cost pricing, with the burden of persuasion on the plaintiff. Thus the proof of a predatory scheme takes on significance only in the context of the several other elements of proof, and it is only the conjunction of these elements that enables courts effectively to distinguish predation from legitimate competition.

Elzinga and Mills express concern that we are "too eager to give the benefit of the doubt to an anticompetitive theory."[72] But their concern is unwarranted even focusing on the second element alone—proof of a plausible scheme of predation. Despite their rhetoric about "fuzzy resemblance," Elzinga and Mills acknowledge that we "always insist that strategic theories must be factually supported."[73] Insistence on factual support for strategic theories appears in the specific subelements required to prove plausibility under each of the predatory strategies and in our close analysis of the facts in each of the several case illustrations that apply our criteria.[74] For example, in *Pacific West Cable Co. v. Sacramento Cable Television*,[75] the predatory strategy of financial market predation was additionally supported by evidence from the defendant's files that assessed the financial resources of the victim and spoke of sending a message to the victim's bankers.[76] In cost-signaling, evidence consistent with predation would include a knowingly false announcement of a cost breakthrough, deliberately biased cost reports made available to the public or industry, or proof of a corporate plan to engage in cost-signaling. Indeed, as emphasized in our main article, the alleged scheme of predation and postpredation market conditions must add up to "a compelling theory of predation."[77] Moreover, under our proposal, the plaintiff has the burden of establishing the plausible predatory theory.

2. Information Assumptions

Elzinga and Mills accuse us of "hubris" in adopting an "incumbent-knows-best" assumption that the incumbent always has more information than the prey—which, they dramatically reveal, "lies at the heart of the predatory pricing

71. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2264.

72. Elzinga & Mills, *supra* note 1, at 2481 n.26.

73. *Id.*

74. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2293-96 (discussing *Pacific West Cable Co.*); *id.* at 2306-08 (discussing *Wisconsin Bell*); *id.* at 2315-17 (discussing *General Foods*). *See generally infra* Appendix.

75. No. 88-985 (E.D. Cal. filed Aug. 4, 1988). We discussed this case in our earlier article. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2293-96.

76. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2293-96.

77. *Id.* at 2266.

theories that [we] would thrust upon the courts."[78] They appeal for support to examples involving test market predation and cost-signaling.[79] At the risk of upsetting their metaphor, we point out that proof of several predatory strategies, in particular financial market predation, requires no assumption of superior information by predator. The only necessary assumption is that lending markets cannot feasibly make loans contingent on distinguishing whether the debtor's losses stem from predation or from agency costs.[80] Neither does test market predation require an information asymmetry. It suffices simply to "jam" market signals, or muddy the waters, so that the prey is unable to gauge demand and becomes less willing to risk entry.[81] Similarly, in cost-signaling the predator does not need a disproportionate knowledge of its rival's costs. The predator need only know more about its own costs, which seems a reasonable presumption—and even then the presumption is subject to rebuttal.[82] Finally, we do not assume as Elzinga and Mills suggest, that a new entrant could never be more creative or efficient than an incumbent.[83] Indeed, it is to preserve that very real possibility that we seek to identify predatory strategies that would prevent such an entrant from bringing its innovations to the market. We illustrate these points below for both test market predation and cost-signaling.

a. Test Market Predation. Under a test market strategy, an incumbent firm engages in below-cost pricing to frustrate efforts by a new entrant to probe market demand in the limited submarket that the entrant is attempting to enter. Elzinga and Mills object that we make unjustified information and other factual assumptions, because this strategy cannot succeed unless (1) outside sources of market information are unavailable (for example, market research consultants, future customers), and (2) the incumbent has been able by similar tactics to "thwart all entry attempts by similarly positioned rivals."[84]

Proof of a test market predation strategy requires evidence that price-cutting prevents the victim from learning about demand under normal competitive conditions, but our criteria do not restrict the means an entrant may use to inform itself.[85] Indeed, the explanation of this requirement in our main article states that the standard is measured not by whether the victim itself lacked knowledge of market demand, but by whether a "representative firm in the

78. Elzinga & Mills, *supra* note 1, at 2482.

79. *Id.* at 2481-82.

80. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2286-88.

81. *See id.* at 2311-14.

82. We also analyze the case of mutual ignorance, suggested by Judge (then Professor) Easterbrook, when neither the incumbent nor the entrant knows the costs of its rival. We show that predatory cost-signaling based on strategic commitment by the incumbent achieved through its price reduction would be a credible strategy even under conditions of mutual ignorance. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2325 & n.380.

83. *See* Elzinga & Mills, *supra* note 1, at 2482.

84. *Id.* at 2481.

85. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2313-14.

industry"—a rational firm—would be unable to assess demand.[86] If, as Elzinga and Mills suggest, other equally efficient information channels are available, such as market research or prospective customers, then a representative firm in the industry would not be confused, and a test market or "signal jamming" strategy would be implausible.[87] Thus, appropriate evidence in support of a test market predation theory would demonstrate that alternative available informational channels were unavailable, significantly more costly, or less accurate.

Similarly, if the signal jamming fails to exclude other firms under the same market conditions, despite similar price-cutting by the incumbent (as in Elzinga and Mills's beer market example[88]), then proof of predation will likely fail if entry occurs during the same time period or in a later time period under similar market conditions. Even if market conditions have changed, the entry of other firms would likely bar a predatory pricing suit on both market structure and recoupment grounds. The successful entry of other firms—when the predatory strategy involves market exclusion, as in signal jamming—is evidence that market barriers are low, and the increased competition from new entrants is evidence that recoupment is improbable. Once again, Elzinga and Mills's critique falls short by their tendency to focus on individual elements or subelements construed in isolation.

b. Cost-Signaling. In cost-signaling a predator engages in below-cost pricing to mislead the prey into believing that the predator has lower costs, causing the prey to leave the market. Our article proposed four indicators to identify market conditions in which a cost-signaling strategy is plausible—one of which Elzinga and Mills find to be "particularly problematic":[89] "An event, or series of events, known by the victim, has occurred that could have enabled the predator to significantly reduce its variable costs."[90] Elzinga and Mills interpret this indicator to mean that if an event has occurred that "credibly insinuates a reduction in the incumbent's costs, the court should presume that the incumbent is a predator."[91]

Elzinga and Mills seriously misinterpret our article on this point. The indicator that Elzinga and Mills find problematic simply requires evidence of some reasonable basis for a competitor to think that the alleged predator may have achieved a cost reduction. It is sufficient neither for a presumption that the defendant is a predator, nor even that cost-signaling predation is a plausible theory of the case. Indeed, it is but one of four indicators that we suggest are required for proof of a cost-signaling predation strategy. The other indicators include, for example, evidence that the alleged predator has previously passed

86. *See id.*
87. Elzinga & Mills, *supra* note 1, at 2481.
88. *See id.*
89. *Id.* at 2482.
90. *See infra* Appendix (Cost-Signaling).
91. Elzinga & Mills, *supra* note 1, at 2482.

on cost reductions through lower costs to buyers.[92] Moreover, as emphasized above, this second element of our five-part legal framework merely establishes that a predatory theory is plausible under the facts of the case. There must also be proof of all the other elements, including sales by the defendant below cost. Thus, if in fact the defendant's low prices stem from real cost savings, then the plaintiff would be unable to prove below-cost pricing, and the case will fail. Here again, Elzinga and Mills's critique is clouded by their tendency to focus in isolation on individual elements or subelements of our legal framework.[93]

C. PROBABLE RECOUPMENT

Proof of probable recoupment requires evidence that the alleged predation excluded or disciplined rivals or potential rivals, and thereby injured competition and consumers by enabling the predator to raise prices or lower quality or dangerously threaten to do so. Elzinga and Mills challenge our explication of this requirement in one respect only: They disagree that the required degree of recoupment proof should be permitted to vary depending on the strength and persuasiveness of the predatory scheme and supporting evidence.[94] Elzinga and Mills maintain that the standard of proof for probable recoupment should be the same no matter how plausible and coherent the predatory scheme and supporting evidence.[95]

Proof of recoupment can be exceedingly difficult and costly if it requires detailed quantitative evidence that the predator has actually recouped its losses or is likely to do so. For example, Elzinga and Mills recommended in a 1989 article that proof of recoupment be based on a calculation of the likely present discounted value of profits,[96] an approach that presents formidable difficulties of proof.[97] A correct calculation under this approach would require projections of future profits and a knowledge of the predator's capital costs.[98] While the

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92. *See infra* Appendix (Cost-Signaling).

93. While we have responded at length to this critique of our proposed tests for signal jamming and cost-signaling, it must be pointed out that Elzinga and Mills themselves note that we qualified our discussion of these theories as less developed than financial market and reputation effect predation, to which we devoted a substantial part of our article. *See* Elzinga & Mills, *supra* note 1, at 2481. Yet they do not analyze the information requirements of these more powerful predatory theories. Thus, while Elzinga and Mills specifically criticize our theories of test market and cost-signaling predation for their asserted fragility, they do not similarly criticize our leading theories—financial market and reputation predation—although it is on these theories that we have placed our main effort.

94. *See* Elzinga & Mills, *supra* note 1, at 2483.

95. *Id.*

96. *See generally* Elzinga & Mills, *supra* note 34.

97. Of course, a quantitative standard becomes manageable if recoupment does not occur for twenty years, as appears to have been the case in *Matsushita Electric Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986), because the discount factor is then so high that recoupment becomes impossible under almost any assumption of future profit. In that event, the quantitative approach becomes a simple exercise. *See* Elzinga & Mills, *supra* note 1, at 2483 & n.36.

98. Moreover, in an uncertain world, a rational strategy of predation does not necessarily lead to full recoupment of the predatory investment. A predatory campaign may last longer than the predator anticipated, resulting in net losses, and yet the predatory episode may be fully rational business

Supreme Court has suggested that calculation of the present value of future predatory profit is one means of proving recoupment, both the Court[99] and the lower courts[100] have recognized alternative ways of showing recoupment. These alternatives include proof of supracompetitive pricing or the likelihood of that result—which may be shown by increased concentration, high entry barriers, higher prices, or other market conditions that make future recoupment likely.[101]

Brooke Group established, at least by strong implication, that the plaintiff bears a high burden of proof on recoupment when the predatory theory is weak. In this decision the Court emphasized that apart from the infrequency of predatory pricing, a key factor in sustaining the lower court's summary dismissal of the case was the weakness of the predatory theory—predation by tacit coordination among multiple firms.[102] Moreover, the Court's exacting and highly unusual review of the sufficiency of the evidence in *Brooke Group* in itself suggests that the Court was applying a higher standard of proof for recoupment due to the weakness of the particular predatory theory upon which the plaintiff relied.[103] Indeed, the Court viewed the predatory theory in *Brooke Group* as even more improbable than the theory of predation by explicit collusion,[104] which it had questioned in *Matsushita*.[105]

If, as Elzinga and Mills contend, the standard of proof for recoupment is the same whatever the predatory theory, the *Brooke Group* Court's focus on the weakness of the specific predatory theory makes little sense. The Court need only have said that because predatory pricing cases require proof of recoupment and such proof is lacking here, summary dismissal is appropriate. Instead, it found the alleged predatory scheme only barely plausible, expressing grave misgivings. Focusing on recoupment, the Court then went on to an elaborate

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behavior in light of the sequential nature of business decisionmaking. For example, suppose a predatory price war has lasted for a year and at the end of that period the predator anticipates it will take three more months of below-cost pricing to exclude or discipline the prey. The predator will rationally continue its price discounting if, disregarding past sunk costs, its future income will exceed its future costs. *See generally* 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 727c, 726d4 & n.109, at 218, 272-73 (rev. ed. 1997).

99. *See* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 225-26 (1993).

100. *See* Advo, Inc. v. Phila. Newspapers, Inc., 51 F.3d 1191, 1200-01 (3d Cir. 1995); Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Legal & Prof'l Publ'ns, 63 F.3d 1540, 1554 (10th Cir. 1995); Traffic Scan Network, Inc. v. Winston, 1995 Trade Cas. (CCH) ¶ 71,044, at ¶ 74,946 (E.D. La. May 24, 1995).

101. *See, e.g.*, Taylor Publ'g Co. v. Jostens, Inc., 216 F.3d 465, 477-78 (5th Cir. 2000) (stating proof requires showing of a "reasonable chance" of recouping losses, not proof of actual effects); *Advo*, 51 F.3d at 1200-01 (judging reasonable prospect of recouping in terms of market structure, especially entry barriers); *Multistate Legal Studies*, 63 F.3d at 1554 (noting likely recoupment can be shown by increased market power); *Traffic Scan Network*, 1995 Trade Cas. (CCH) ¶ 71,044, at ¶ 74,946 (same).

102. *See Brooke Group*, 509 U.S. at 227 (noting that "[f]irms that seek to recoup predatory losses through the conscious parallelism of oligopoly must rely on uncertain and ambiguous signals . . . subject to misinterpretation"); *Matsushita*, 475 U.S. at 590 (noting that a conspiracy to stifle competition is "incalculably more difficult to execute than an analogous plan undertaken by a single predator").

103. *Brooke Group*, 509 U.S. at 226, 228.

104. *Id.* at 227.

105. *Matsushita*, 475 U.S. at 590.

and painstaking review of the sufficiency of the evidence—a type of review the Court rarely undertakes.[106] Thus, in *Brooke Group*, the Court's highly demanding standard of proof of recoupment appears related to the weakness of the predatory theory in that particular case—predation by tacit coordination.

As a natural corollary, if the evidence supporting a predatory theory were powerful, as might appear in a well-documented case of financial market predation, then a less rigorous approach to recoupment proof should be permissible. What we are suggesting amounts to a sliding-scale approach to proof of recoupment. The weaker the predatory theory, the more demanding the proof of recoupment must be, and vice versa. This makes sense because a highly demanding recoupment standard makes it exceedingly hard for a plaintiff to prevail. Such a defendant-favored rule is justified when the predatory theory is only weakly plausible because it is likely to avoid false convictions and discourage frivolous cases. On the other hand, when the predatory theory is strongly plausible, an excessively demanding recoupment requirement can lead to a high probability of false acquittals.

The sliding-scale approach to proof of recoupment is an important element in our framework for evaluating claims of predation. Precedent for using a sliding-scale approach appears in predatory pricing decisions, in attempt-to-monopolize cases generally, as well as in other types of antitrust decisions. In the predatory pricing cases, the quantum of intent evidence that courts in at least some circuits require to prove a violation increases as price rises above average variable cost (AVC) and approaches average total cost (ATC), and decreases as price approaches the lower cost level.[107] In other attempt-to-monopolize cases, courts have engaged in a similar balancing of intent and conduct evidence.[108] In its

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106. *See Brooke Group*, 509 U.S. at 230 ("It is not customary for this Court to review the sufficiency of the evidence . . . ."); ROBERT L. STERN & EUGENE GRESSMAN, SUPREME COURT PRACTICE 259 (5th ed. 1978) (stating that the Supreme Court does not usually review facts because its role is to decide cases of "importance far beyond the particular facts and parties involved"); *see also* Dick v. N.Y. Life Ins. Co., 359 U.S. 437, 454 (1959) (Frankfurter, J., dissenting) (observing that questions of fact traditionally are not of the sort to be reconsidered at the Supreme Court level).

107. *See, e.g.*, McGahee v. N. Propane Gas Co., 858 F.2d 1487, 1503 (11th Cir. 1988) (stating price between ATC and AVC requires proof of predatory intent, but as price approaches AVC, less intent evidence needed to sustain inference of predation); 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 738a, at 358 (rev. ed. 1996) (affirming reasonableness of sliding-scale type approach, but criticizing basing approach on ATC); *cf.* Int'l Travel Arrangers v. NWA, Inc., 991 F.2d 1389, 1394 (8th Cir. 1993) (stating at prices below AVC the defendant has the burden to show nonpredation (quoting Morgan v. Ponder, 892 F.2d 1355, 1360 (8th Cir. 1989))); Henry v. Chloride, Inc., 809 F.2d 1334, 1346 (8th Cir. 1987) (price below AVC presumptively unlawful, while strong presumption of legality when price above AVC but below ATC).

108. *See, e.g.*, Buffalo Courier-Express, Inc. v. Buffalo Evening News, Inc., 601 F.2d 48, 54 (2d Cir. 1979) (noting that in intent-to-monopolize cases where both intent and anticompetitive conduct necessary, intent "may give color to the acts," and vice versa); SULLIVAN & GRIMES, *supra* note 27, § 3.6a1, at 133 (possible sliding-scale determination in attempt-to-monopolize cases based on severity of anticompetitive conduct and market power (citing Lorain Journal Co. v. United States, 342 U.S. 143 (1951))).

recent decision in *California Dental Ass'n v. FTC*,[109] the Supreme Court held that the quantum of evidence needed to show market power fluctuates depending on the obviousness of the procompetitive benefits derived from the alleged anticompetitive conduct or the absence of less restrictive alternatives.[110] Thus, a sliding-scale approach to recoupment is consistent both with legal precedent and with the logic of exclusionary conduct rules such as predatory pricing, when assessment of legality requires use of multiple factors.[111]

D. PRICE BELOW COST

As Elzinga and Mills recognize, the courts typically presume that a price below AVC is unlawful given the other legal elements established by *Brooke Group* and that a price above ATC is conclusively lawful. As we have seen, some courts allow that a price between ATC and AVC can be predatory depending on the evidence. Our recommended approach to proof of below-cost pricing would modify existing practice in two ways. First, it would substitute an average avoidable cost (AAC) standard for AVC, consistent with William Baumol's recent suggestion.[112] Second, it would permit a finding of below-cost pricing when price is below long-run average incremental cost (LAIC). Elzinga and Mills do not object to using AAC in place of AVC. However, they reject our proposal that a price above AAC but below LAIC may, under some circumstances, be unlawful.

LAIC is the per-unit cost of producing an increment of output whenever such costs were incurred. Thus, it encompasses fixed costs incurred in producing the product and approximates a long-run marginal cost standard. Elzinga and Mills reject use of the LAIC standard because it would include sunk costs incurred before the period of predatory conduct.[113] They urge that a price above AAC can never be predatory because, by definition, it will always be "remunerative."[114] They insist that a sunk-cost investment should be included in the

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109. 526 U.S. 756 (1999).

110. *Id.* at 780, 781; *see also* 7 AREEDA, *supra* note 66, ¶ 1507, at 402 (describing "a kind of 'sliding scale' which demands more proof of power when the benefit seems clear or more proof of benefit, or the absence of a less restrictive alternative, when the harm appears serious"). *See generally* FLEMING JAMES, JR. ET AL., CIVIL PROCEDURE § 5.16, at 278 (4th ed. 1992) (sliding scale used in determining whether to grant preliminary injunction or temporary restraining order when "a strong showing of one factor will compensate for a weaker showing of another").

111. However, the balancing or sliding-scale approach cannot remove the need to supply at least some proof of each element. *See, e.g.*, *Brooke Group*, 509 U.S. at 220-24 (requiring both below-cost pricing and recoupment to show antitrust violation).

112. *See* William J. Baumol, *Predation and the Logic of the Average Variable Cost Test*, 39 J.L. & ECON. 49, 58 (1996).

113. *See* Elzinga & Mills, *supra* note 1, at 2484.

114. *Id.* The argument that a price above short-run cost cannot be predatory seems contrary to Elzinga and Mills's assertion in that "strategic theories of predation typically are not contingent on prices being below cost." *Id.* at 2483 n.39. Strategic theories allow that a predator may sacrifice short-run profits at a price above AAC in order to discipline a rival or drive the rival from a market. Such a profit sacrifice meets Elzinga and Mills's characterization of the accepted view that "predatory

predatory cost standard only if it is made "with the sole purpose of deterring a prospective entrant," and in that case, the investment becomes an avoidable cost.[115] In addition, they assert that the LAIC standard creates formidable cost imputation problems, burdens defendants in high sunk-cost industries (for example, high tech), and discourages beneficial price-cutting.[116]

In response, this section of our Essay must be read in close conjunction with the business justification section because the two sections describe a single process in which predatory and efficiencies evidence are weighed. Thus, the possible overinclusiveness of the LAIC standard is balanced by our business justification defense, which recognizes both defensive and market-expanding justifications. A price blow LAIC is a justified defensive response to a rival so long as the price remains above AAC and the price is not below a price an incumbent firm might reasonably have anticipated charging were it the case that the incumbent's price did not exclude rivals.[117] Thus, as a clarification of the discussion in our previous article, we do not mean to suggest that a defensive business justification requires exact proof of the profit-maximizing price in the predatory market. Instead, a defensive business justification requires only a showing that the alleged predatory price is not less than the price (or range of prices) that a rational incumbent would be likely to charge under the assumption of continued competition—rather than rival exclusion—in the market. This provides a suitable legal standard as it can rest on objective pricing data in comparable markets in which the incumbent has faced sustained competition.

An example will clarify. Suppose an incumbent firm has LAIC of $3 and AAC of $1 in a market in which it does not face competition. This starting point reflects a version of the facts in the recent American Airlines case (apart from the specific numbers), in which American faced no competition on several routes from its Dallas hub to smaller cities.[118] Suppose further that as a result of entry by a low-cost carrier into one or more of these city-pair markets, the market price under competition is likely to fall to $2, based on experience in comparable markets in which American faces sustained competition. The reduced price is thus below American's long-run cost of $3 but still not below its AAC of $1. The price reduction to $2 would be justified as legitimate price-

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pricing means pricing that would not be remunerative except for its exclusionary effect." *Id.* at 2484. Thus, economic theory—which Elzinga and Mills agree includes strategic theory—does not require that a predatory price be below AAC (or any other measure of cost). In our previous article, we proposed a cost standard in order to provide some degree of certainty for business planning and also to comply with the Supreme Court's mandate in *Brooke Group* that a predatory price be below "some measure of cost." *See Brooke Group*, 509 U.S. at 222; Bolton, Brodley & Riordan, *supra* note 2, at 2271.

115. Elzinga & Mills, *supra* note 1, at 2484 n.46.

116. *Id.* at 2484.

117. This proposed standard of liability corresponds closely to definitions of exclusionary predatory pricing in the economics literature. *See* Janusz A. Ordover & Robert D. Willig, *An Economic Defense of Predation: Pricing and Product Innovation*, 91 YALE L.J. 8, 9 (1981); *see also* Cabral & Riordan, *supra* note 19, at 160 (stating that in exclusionary predation, "a predatory action" is one that "is unprofitable but for its effect on a rival's exit decision").

118. *See* United States v. AMR Corp., 140 F. Supp. 2d 1141, 1149-50 (D. Kan. 2001).

cutting because it is not below a reasonable anticipated, sustainable, and hence presumably profitable response to a competitive price of a rival. However, suppose instead that the incumbent reduces its price to $1, far below its level of pricing in other markets in which it has faced continued competition following new entry. As a result, the entrant is excluded, and the incumbent thereafter raises its prices back to the level that existed when it held a monopoly in the city-pair route. Even though the price never falls below AAC, the facts strongly suggest predation, because the reduced price appears profitable only because of its exclusionary effect on rivals, followed by recoupment. It follows that unless the incumbent can justify the $1 price on some other legitimate business grounds, this is exclusionary, not competitive, conduct.

When the incumbent's pricing is not a defensive response to a rival's competitive price, but an aggressive response to enhance its sales, we take strong exception to Elzinga and Mills's approach. Elzinga and Mills would recognize a LAIC standard in only one narrow case—when the original commitment to build production facilities was made "with the sole purpose of deterring a prospective entrant."[119] Such a drastic limitation of the predatory pricing rule may severely impair any useful constraint on predation in high sunk-cost industries. It would be a rare case in which a defendant could not present evidence of some slight procompetitive purpose or benefit, such as some learning benefit from the predator's expanded volume of production, caused by its low prices. Nevertheless, to avoid possible overinclusiveness of the legal rule, once the defendant has put forward tangible evidence for a defensive business justification, our approach would place the burden of proof on the plaintiff to persuade the court that a price above AAC but below LAIC was predatory.[120]

To illustrate the problem under a "sole purpose" test, suppose that the predator had a legitimate reason to modestly expand demand, but built a plant with far larger capacity than reasonable demand expectation justified. It would have been far more profitable for the predator to have built a smaller scale plant, but the large plant would still earn a small profit on the investment. More specifically, suppose there is a small probability, say five percent, that the additional capacity would be needed. Under these circumstances, a court applying Elzinga and Mills's approach may find that construction of the larger size plant did not have the sole purpose of excluding rivals because the plant had a small net present value as compared with building no plant at all.[121] But to build a large plant when there is only a five percent probability that it will be useful and a ninety-five percent probability that it will not be needed readily supports

119. Elzinga & Mills, *supra* note 1, at 2484 n.46.

120. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2273.

121. To be sure, the plaintiff may argue under the sole purpose test that the investment beyond optimal size was made for the sole purpose of excluding an entrant. But such an argument faces difficulties because future demand is always uncertain.

the conclusion that the dominant purpose and effect of the larger investment was predatory, absent other justifying factors.

Under our proposal this issue would be analyzed under the business justification defense. The defendant could offer evidence that its construction of the large plant and its subsequent below-cost pricing were based on market-expanding or other efficiencies. Once the defendant has put forward evidence of an efficiencies explanation, the burden of persuasion would shift to the plaintiff. If, as in the previous example, there are both pro- and anti-competitive effects, then the court or enforcement agency would balance the two effects.[122]

In response to Elzinga and Mills's assertion that the LAIC standard would create formidable cost imputation problems, we maintain that the rule simplifies cost determination. LAIC could replace ATC, which still must be determined under existing law—a clear simplification. As discussed in our article, LAIC appears to be a more tractable standard than ATC—requiring, for example, no allocation of joint and common costs.[123] Moreover, even if use of a LAIC standard should result in some added complexity and burden, the standard is necessary because exclusive reliance on a short-run cost standard, as Elzinga and Mills propose, would create a large gap in predatory pricing enforcement in high sunk-cost industries, particularly those involving intellectual property—a conclusion that Elzinga and Mills do not deny.

Finally, allowing predation claims when prices are above AAC but below LAIC is not crucial for our overall approach. All other aspects of the legal framework remain valid and viable if prices above AAC are held to be presumptively lawful.[124] However, we believe that the narrower approach advocated by Elzinga and Mills could be seriously underinclusive, especially in high fixed-cost industries and in intellectual property cases in which AAC is low.

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122. This follows current enforcement agency guidelines, which permit such balancing when a transaction creates both anti- and pro-competitive effects. *See* U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 4.2 (1995), *available at* http://www.usdoj.gov/atr/public/guidelines/ipguide.htm (last visited July 13, 2001); U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR COLLABORATIONS AMONG COMPETITORS § 3.37 (2000), *available at* http://www.ftc.gov/os/2000/04/ftcdojguidelines.pdf (last visited July 13, 2001); *see also* United States v. Microsoft Corp., 253 F.3d 34, 58-78 (D.C. Cir. 2001) (per curiam) (applying a generally similar balancing and burden-of-proof approach). This would avoid the extreme results of using the sole purpose and effects rule, while still giving scope to significant efficiencies realization.

123. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2272; *see also* 3 AREEDA & HOVENKAMP, *supra* note 98, ¶ 735b3, at 320-21; Baumol, *supra* note 112, at 58.

124. For example, in the recent predatory pricing case involving American Airlines, in which pricing below long-run costs was a major issue, the case could have been resolved on a purely short-run cost analysis. American's prices appear to have been below a measure of long-run costs that included the ownership costs for aircraft reassigned to serve the expanded sales caused by American's price-cutting in response to entry. *See* United States v. AMR Corp., 140 F. Supp. 2d 1141, 1176-78, 1203-04 (D. Kan. 2001). The court viewed the ownership cost of the reassigned aircraft to be a long-run fixed cost. *See id.* In fact, the opportunity costs of the reassigned aircraft are most clearly short-run incremental costs because these costs varied with American's expanded sales volume on the allegedly predatory routes. As a matter of economic logic, the aircraft could have been leased or sold, or earned additional operating profits on other routes. These opportunity costs of expanded sales volume are properly a component of average avoidable costs. Thus, reliance on a long-run cost standard would not have been required to prove that prices were below cost.

E. BUSINESS JUSTIFICATION

Elzinga and Mills appear to agree with our analysis of the business justification defense, terming it a "welcome reminder" of the importance of considering efficiencies in predatory pricing cases.[125] Indeed, they suggest expanding the defenses to include a new type of market-expanding efficiency that they have modeled in another article.[126] They conclude that in a market in which buyers confront significant switching costs, a new supplier may be justified in selling below its costs in order to induce buyers to switch from the incumbent.[127] We think their proposal is worthy of scrutiny, and our proposed rule would allow both newly developed efficiencies justifications and predatory theories to be used, if they are sufficiently well founded economically and supported factually.[128]

The balance of Elzinga and Mills's discussion under this heading consists of two uncontroversial observations which we accept and a conclusion with which we cannot agree. The uncontroversial propositions are that temporary price cuts due to demand shocks or new entry are common and that most episodes of falling prices are not predatory.[129] We agree and intended to say nothing to the contrary in our article. Predatory pricing is the exception, not the rule in price setting—but it is nevertheless damaging when it occurs and is a proper ground for antitrust enforcement. However, we take exception to the inference Elzinga and Mills would draw from these propositions: that therefore continued judicial skepticism about predatory pricing suits is justified because so many suits are without foundation.[130] This conclusion scarcely follows from the premise that

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125. Elzinga & Mills, *supra* note 1, at 2484-85.

126. *See generally* Kenneth G. Elzinga & David E. Mills, *Price Wars Triggered by Entry*, 17 INT'L J. INDUS. ORG. 179 (1999).

127. *See id.* at 180.

128. While the basic construct of Elzinga and Mills's theory seems promising, we see difficulties and competitive risks in the applications that they suggest follow from the theory. We agree that a market entrant may plausibly have to compensate existing customers of the incumbent seller for the costs of shifting to a new supplier, and conceivably, this may require the entrant to sell below its costs. However, we have a problem when they define an entrant to include an incumbent seller who introduces a new product or brand, such as the alleged predator in *Brooke Group*. *See* Elzinga & Mills, *supra* note 126, at 190-93; *see also Brooke Group*, 509 U.S. at 210. Thus, using *Brooke Group* as their illustration, they classify the alleged predator, Brown & Williamson, as a new entrant when it introduced a new look-alike generic cigarette without distinctive markings to compete with the pioneer brand produced by plaintiff. *See* Elzinga & Mills, *supra* note 126, at 190-93. Without attempting to resolve the facts in *Brooke Group*, in which the efficiencies defense issue was not discussed, if an alleged predator is already selling a homogenous product such as cigarettes to distributors within the same marketing channels, it becomes unlikely that the switching costs of customers would be sufficiently large to justify sales below cost, because the product is homogeneous and switching dealers would be dealing with an incumbent seller with whom they may already have had contacts, if not past dealings. When the Elzinga and Mills model is applied to an incumbent firm in this way, it raises anticompetitive risks that a predator introducing a new brand in a market in which it already sells and even involving customers with whom it already deals or in the past has dealt, may dress up a predatory scheme by characterizing it as justified below-cost pricing by a new entrant.

129. *See* Elzinga & Mills, *supra* note 1, at 2485.

130. *See id.*

most business pricing is nonpredatory, and they cite nothing else to support it. Nor does it take into account that past enforcers and courts lacked the guidance of modern predatory theories that have shown how and under what conditions predatory pricing can be rational business conduct. Moreover, none of this is relevant to our efficiencies defense, which is meant to assist courts in correctly distinguishing between competitive and predatory pricing. Indeed, Elzinga and Mills, while expressing appreciation for our recognition of efficiencies, do not fully recognize how it modifies our treatment of other elements and thereby prevents overinclusiveness in predatory pricing enforcement.

III. INTERPRETING POSTDECISION EVIDENCE IN THREE SELECTED CASES

Elzinga and Mills assert that ex post evidence makes it possible to determine whether courts have been excessively skeptical about predatory pricing in three selected cases, each of which was decided for the defendant: the Supreme Court decisions in *Matsushita*[131] and *Brooke Group*,[132] and the 1984 FTC decision in *In re General Foods Corp.*[133] Elzinga and Mills say that we "attribute the plaintiffs' failure at trial to judicial skepticism and the lack of supporting strategic theory," but that in fact ex post evidence "vindicated" the judicial outcomes.[134] From this they would conclude that predatory pricing is indeed rare and that therefore strategic theory is unnecessary. However, these conclusions are not justified.

In focusing on the legitimacy of the judicial result in these three cases, Elzinga and Mills may seek to draw us into defending outcomes that we have not challenged and where the available facts provide no appropriate test for strategic theory. The courts did not view these cases through the lens of modern strategic theory, and nothing in the opinions indicates that the courts considered such theories.[135] We did assert that strategic theory would have been helpful in the analyses, but because the decisions were not focused on modern strategic analysis, we cannot say the cases were decided incorrectly.

Our purpose in discussing these cases was different. *Matsushita* and *Brooke Group* enunciated foundational legal doctrine for predatory pricing. The facts of *General Foods* provided an illustration of possible test market predation, but only by accepting the market definition urged by FTC Complaint Counsel and rejecting that of the FTC. Moreover, the three cases scarcely constitute an unbiased statistical sample of current predatory pricing cases—although there is one interesting regularity. In each of the three cases at least one of the authors,

131. Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574 (1986).

132. Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209 (1993).

133. 103 F.T.C. 204 (1984).

134. Elzinga & Mills, *supra* note 1, at 2486.

135. However, in *General Foods*, strategic theories were apparently argued by the FTC Complaint Counsel, but there is no indication that they entered into the FTC's decision. *See* John C. Hilke & Philip B. Nelson, *Strategic Behavior and Attempted Monopolization: The Coffee (*General Foods*) Case*, *in* THE ANTITRUST REVOLUTION 208, 209-10 (John E. Kwoka, Jr. & Lawrence J. White eds., 1989).

and in one case both, served as chief expert witness or economic advisor for the defendants.[136] That was no doubt convenient for the authors in writing their critique, but is not a particularly powerful sampling method. Finally, while the outcomes in each case may be justified, the evidence relied on by Elzinga and Mills does not prove the case. Thus, the three decisions prove neither that predation is rare nor that strategic theory can play no helpful role in predatory pricing enforcement.

A. *GENERAL FOODS*

Elzinga and Mills assert that *General Foods* has been "the poster child" for the strategic approach, but that postdecision evidence shows that the price-cutting involved in this case—far from raising any predatory risk—was simply beneficial competition.[137] While we cannot rule out a competitive interpretation, we find Elzinga and Mills's analysis unpersuasive and suggest that strategic theory could have been helpful—as even Elzinga and Mills briefly contemplated in an earlier article.[138]

General Foods's Maxwell House brand was the largest selling coffee in the East.[139] Procter & Gamble's (P&G) Folgers coffee was the most popular brand in the West, but was not sold in the East.[140] Desiring to sell its brand in the East, P&G, pursuing its usual marketing practice, attempted to test consumer response in a few eastern cities or "test markets."[141] General Foods's response was to cut the price below its average variable cost in the test markets and to hold the price at that level for up to a year.[142] Following the price-cutting, P&G made no further attempts to enter other eastern markets until seven to eight years later.[143]

Elzinga and Mills assert that if the price-cutting were intended to be predatory, postdecision evidence shows that it was a dismal failure.[144] General Foods was not able to exclude Folgers coffee from the East.[145] General Foods did not obtain a monopoly in the national coffee market. To the contrary, its national market share fell, while P&G's national market share increased.[146] Finally, analysis shows that General Foods could not have expected to recoup its losses.

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136. *See In re* General Foods, 103 F.T.C. 204, 216 (1984) (Elzinga); Donald J. Bordeaux, Kenneth G. Elzinga & David E. Mills, *The Supreme Court's Predation Odyssey: From Fruit Pies to Cigarettes*, 4 SUP. CT. ECON. REV. 57, 57 n.††† (1995) (*Brooke Group*: Elzinga and Mills); Kenneth G. Elzinga, *Collusive Predation: Matsushita v. Zenith*, *in* THE ANTITRUST REVOLUTION, *supra* note 135, at 241, 241 (*Matsushita*: Elzinga).

137. Elzinga & Mills, *supra* note 1, at 2489.

138. *See* Elzinga & Mills, *supra* note 34, at 889.

139. *General Foods*, 103 F.T.C. at 216.

140. *Id.*

141. *Id.*

142. *See* Hilke & Nelson, *supra* note 135, at 222.

143. *See* SCHERER & ROSS, *supra* note 36, at 388; Hilke & Nelson, *supra* note 135, at 211.

144. *See* Elzinga & Mills, *supra* note 1, at 2487-89.

145. *General Foods*, 103 F.T.C. at 271.

146. *Id.* at 261.

The facts recited by Elzinga and Mills are incomplete and, as a result, misleading. True, *General Foods* did not prevent P&G's Folgers from entry into the East, but the legal theory on which the case was brought—and the reason we use the case as an illustration of test market predation—was not that General Foods sought to permanently exclude Folgers coffee, but that it sought to delay Folgers's entry into eastern markets and thereby perpetuate its own dominance.[147] Elzinga and Mills appear to dismiss delayed competition as a source of consumer injury, but delayed competition hurts consumers just as much as permanent restraints during the period of delay, and we know of no antitrust principle to the contrary. True, General Foods did not gain a monopoly in the national coffee market, but this was scarcely a realistic goal in view of P&G's leading position in the West and the fact that P&G was well financed and a far larger firm.[148] It is also true that P&G's national market share grew as compared with that of General Foods, but the alleged predatory effect was that General Foods was able to maintain its dominant market share in the East for seven or eight years longer than competition would otherwise have allowed.[149] Moreover, the market share data on which Elzinga and Mills rely deal mainly with the postdecision period, beginning in 1984, whereas the claimed predatory exclusion from eastern markets occurred between 1971 and 1978, and by 1984 P&G had entered these markets.[150]

Most seriously of all, national market share data are an incomplete measure of market competitiveness. Elzinga and Mills fail to investigate the level of pricing or other earmarks of economic performance. In fact there was evidence that in the regional eastern markets which P&G sought to enter, General Foods held an overall market share of forty-three percent.[151] To be sure, the FTC's decision defined the market as national and rejected regional markets, but in determining whether consumers were hurt, national shares can be dispositive only if we can be sure the market is correctly defined. In making that determination, the level of pricing and other performance indicators are relevant.[152]

Thus, in investigating whether the predator had market power, it appears relevant to inquire into whether the predator had pricing power in markets narrower than the national market. Relevant here would be evidence presented

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147. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2316.

148. *General Foods*, 103 F.T.C. at 252.

149. *Id.* at 256-57.

150. Market shares between 1981 and 1984 are not reported, and market shares between 1978 and 1981 appear only as an unidentified component in a single summary figure for 1971 through 1981. *See id.* at 339.

151. *See id.* at 292, 339.

152. *See* SCHERER & ROSS, *supra* note 36, at 353-410; Alexis Jacquemin & Margaret E. Slade, *Cartels, Collusion, and Horizontal Mergers*, *in* HANDBOOK OF INDUSTRIAL ORGANIZATION 415, 454 (Richard Schmalensee & Robert D. Willig eds., 1989) (high entry barriers in relevant markets, persistent price discrimination, high prices in dominated markets, strong brand differentiation, absences of close substitutes, and customer switching costs); *see also* U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES §§ 1.21, 1.52, 2.21, 3.0, at 8, 17, 22, 25 (rev. ed. 1997) (assessing competitive effects of mergers depends on factors additional to increased concentration).

by the FTC economists showing that (1) the alleged predator discriminated in price between its various markets depending on the strength of local competition, (2) the predator's coffee commanded a premium price at the wholesale level, and (3) the profit margin on such coffee placed General Foods within the top five percent of profitable firms.[153] All of this evidence is consistent with consumer injury, and any postdecision investigation ought to explain it.

Finally, in a narrow sense it is true, as Elzinga and Mills assert, that General Foods could not have expected to recoup its predatory losses in the test markets through future sales in those markets.[154] But note the narrowness of their inquiry. Focusing on two small eastern cities, Elzinga and Mills examine whether the predator could recoup its predatory losses through future sales in these markets alone.[155] Not surprisingly, they find that General Foods would not be able to recoup its losses through sales in these two small cities.[156] But what of that? Under a test market strategy, recoupment would come not from future sales in the test market, but from sales in the other markets throughout the East where entry was deterred. Presumably the consumer loss from denial of access to a brand they would otherwise have purchased would far outweigh the narrowly confined consumer gain from below-cost pricing in two small markets—which in itself causes a misallocation of resources.

Interestingly, the possible relevance of strategic theory in *General Foods* was raised by Elzinga and Mills in the very same article.[157] In what must have been an early attempt to evoke strategic theory in an antitrust case, Elzinga and Mills briefly inquire whether the alleged predator might have recouped through a reputation effect strategy that would have discouraged entry into other markets outside the test markets.[158] While acknowledging that reputation effect provides a stronger basis for recoupment than future sales in the test markets alone, Elzinga and Mills nevertheless reject a reputation effect strategy, finding that P&G would have had effective counterstrategies—certainly a possibility in view of its large relative size.[159]

However, had Elzinga and Mills considered a test market strategy, they might have reached a different result. Under a test market strategy, the predatory effect is caused *not* by reputation effects in other markets but by jamming the information the victim seeks from the test market. With test market data obscured, the victim remains uncertain whether entry would be profitable and, if it is a cautious firm as was P&G,[160] it may decline to enter. Interestingly, this

153. *See* Hilke & Nelson, *supra* note 135, at 221 & n.40, 215 & n.25, 220.

154. *See* Elzinga & Mills, *supra* note 34, at 882-89.

155. *See id.* at 884-88.

156. *See id.* at 887-88.

157. *See id.* at 889.

158. *See id.*

159. *See id.* (discussing a selective "hit and run" entry counterstrategy for P&G).

160. *See In re* General Foods, 103 F.T.C. 204, 216 (1984); John C. Hilke & Philip Nelson, *Care at Innovation: Strategic and Structural Characteristics of New Product Introductions*, 8 J. ECON. BEHAV. & ORG. 213, 221 (1987).

may be one of the few effective means by which a relatively small firm can prey against a larger. This case study also shows the limitations of static theory to assess predatory pricing and the need in using modern theory to carefully match the strategic theory to the facts.

B. *MATSUSHITA*

Elzinga and Mills assert that in *Matsushita*, which involved an alleged twenty-year-long predatory pricing conspiracy among twenty-one manufacturers or sellers of television sets, postdecision evidence showed that competition was not injured.[161] Elzinga and Mills intimate that we think strategic theory might have led to finding an antitrust violation, but this is an incorrect reading of our article.

Our article discussed *Matsushita* in only the briefest terms.[162] Nowhere do we claim that *Matsushita* was an instance of predatory pricing. We cite the case mainly for its broad pronouncements that have influenced subsequent decisions. We make clear that *Matsushita* involved predation by group action—here involving twenty-one separate (but sometimes related) business entities—which the Court thought posed serious obstacles to coordinated predation.[163] Far from intimating that strategic theory might have led to a different result, we pointed out that the strategic theories discussed in our article stand on a firmer ground than those in *Matsushita* and *Brooke Group* because the theories we rely on involve action by a single firm, not coordinated group action.[164] Thus, Elzinga and Mills have sought to construct an issue when none exists.[165]

C. *BROOKE GROUP*

Elzinga and Mills assert that in *Brooke Group*, which involved alleged predatory pricing by tacit coordination among cigarette producers to limit the growth of discount cigarettes, posttrial evidence vindicates the judicial finding that the price war was not predatory.[166] They say this is pertinent to our article because we claim that the case illustrates disciplining-of-rivals predation and that strategic theory would have illuminated the issues in the case.[167] As an additional dereliction, we are said to have misled readers on the below-cost pricing issue—they do not say deliberately, but it must be serious nonetheless because they put it first.[168]

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161. *See* Elzinga & Mills, *supra* note 1, at 2490.

162. *See, e.g.*, Bolton, Brodley & Riordan, *supra* note 2, at 2243, 2255 & n.97, 2266-67, 2269-70.

163. *See Matsushita*, 475 U.S. at 588-90 (difficulty of successfully allocating gains and losses among multiple conspirators).

164. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2266-67.

165. That is not to say that the interpretation that no predation occurred is immune from challenge. *See, e.g.*, Rene Belderbos & Peter Holmes, *An Economic Analysis of* Matsushita *Revisited*, 40 ANTITRUST BULL. 825, 853 (1995).

166. *See* Elzinga & Mills, *supra* note 1, at 2493.

167. *See id.* at 2492.

168. *See id.*

The assertion that we claim the facts of *Brooke Group* illustrate disciplining-of-rivals predation distorts what we said and is contrary to our clear purpose in saying it. We did not say that *Brooke Group* was an actual illustration of disciplining of rivals, but only that it was an illustration of "possible" price discipline.[169] Moreover, our reference to the price-disciplining allegation in *Brooke Group* was made not in support of the accuracy of the factual claim, but to clarify a legal issue. The issue was whether predatory pricing aimed to discipline a price-cutter can be unlawful even if it does not exclude the victim from the market—a proposition on which not all writers agree.[170] *Brooke Group* clearly settled this question in the affirmative, and that was important in developing our proposed legal rule, which encompasses both types of predation.

However, we stand by our assertion that strategic theory would have been helpful in understanding the issues in *Brooke Group*. To see why we need only refer to Elzinga and Mills's recitation of the postdecision facts supporting the Court's ruling for the defendant. Elzinga and Mills assert that the dismissal was justified because (1) the predator did not gain a monopoly, (2) the prey was not excluded from the market, and (3) the price war did not curtail the sale of discount cigarettes.[171]

First, at the most obvious level the goal of the alleged predation was not market exclusion, but disciplining of a price-cutter.[172] So the fact that the prey was not excluded is irrelevant. What is relevant is that the prey raised its price after eighteen months, whereupon the price war ended.[173] Second, the plaintiff's case failed in *Brooke Group* because it was unable to prove that defendant had a plausible means of recouping its predatory losses in future sales of discount cigarettes.[174] Strategic analysis would have been helpful in focusing more systematically on other possible recoupment strategies. As suggested in our main article, these might have included gains from deterrence of discounting in other cigarette markets, such as branded cigarettes, and deterrence of future price-cutting in discount markets.

More specifically, under a strategic approach the plaintiff might have attempted to produce factual support for a reputation effect or other recognized predatory theory, such as financial market predation, that would have enabled recoupment.[175] If the plaintiff could have shown a sufficient factual basis for

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169. *See* Bolton, Brodley & Riordan, *supra* note 2, at 2269.

170. *See id.* at 2268 & nn.166-67.

171. *See* Elzinga & Mills, *supra* note 1, at 2492.

172. *See* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 217, 227 (1993) (describing defendant's below-cost pricing as intending to pressure Liggett to increase list prices on generic cigarettes).

173. *See id.* at 217.

174. *See id.* at 231-32.

175. We are not alone in suggesting the relevance of strategic approaches. *See* 3 AREEDA & HOVENKAMP, *supra* note 98, ¶ 727g, at 289 (reputation effect); Jonathan B. Baker, *Predatory Pricing After* Brooke Group*: An Economic Perspective*, 62 ANTITRUST L.J. 585, 597 (1994) (financial market predation).

either of these soundly based predatory theories, the defendant would then have been called to explain what legitimate business purpose it had in selling below its costs. The battle between a predatory and an efficiencies explanation might then have resolved the question in *Brooke Group* that so puzzled the dissenters and still puzzles many: How was it rational for the predator to sustain a prolonged price war that it could have called off at any time if it was unable to recoup its losses?[176] The relevance of this inquiry is underscored by Judge Bork's admonition that "economic actors usually have accurate perceptions of economic realities."[177] We do not claim that the use of strategic theories, including a developed efficiencies defense, would necessarily have led to a different result in *Brooke Group*, but that it would have been informative to consider such theories.

Finally, Elzinga and Mills's assertion that we misled readers on the issue of price below cost[178] involves an error, if it was an error, in an explanatory parenthetical in a footnote and is entirely irrelevant to interpreting the Supreme Court's opinion. In discussing *Brooke Group*, we said that the defendant "held prices below AVC for eighteen months, sustaining losses of millions of dollars."[179] In support of that assertion we cited the Supreme Court statement that there was sufficient evidence for a reasonable jury to have found below-cost pricing for eighteen months with our explanatory parenthetical: "(jury finding sustained by the Supreme Court)."[180] Elzinga and Mills say that this is misleading because the cost issue was strongly contested at trial and the jury's general finding in favor of plaintiff made no explicit finding on cost.

We fail to see the point of their objection because for purposes of the decision both the majority and dissenting Justices viewed the facts as showing sales below costs.[181] Thus, the majority opinion in *Brooke Group* states—as Elzinga and Mills themselves acknowledge—that "a reasonable jury could conclude that for a period of approximately 18 months, [defendant's] prices . . . were below its costs."[182] The dissenters state that "[d]uring the full 18-month period, B&W's revenues ran consistently below its total variable costs, with . . . a total loss . . . of almost $15 million."[183] Professors Areeda and Hovenkamp have a

176. *See Brooke Group*, 509 U.S. at 248-49 (Stevens, J., dissenting).

177. Rothery Storage & Van Co. v. Atlas Van Lines, Inc., 792 F.2d 210, 218 n.4 (D.C. Cir. 1986) (Bork, J.)

178. *See* Elzinga & Mills, *supra* note 1, at 2492.

179. Bolton, Brodley & Riordan, *supra* note 2, at 2257.

180. *Id.* at 2257 & n.111.

181. Such a determination by the Supreme Court was required because below-cost pricing is a necessary element in a predatory pricing case and the Court was reviewing the sufficiency of the evidence to support the jury's verdict for plaintiff. *Brooke Group*, 509 U.S. at 224. The Court undertook this review to provide guidance for the lower courts and to avoid further legal proceedings in a protracted case. *Id.* at 230. While the Court focused its opinion on the new element—recoupment—the review of evidentiary sufficiency would have been incomplete without addressing the sufficiency of the evidence under each legal element, which of course included sales below cost.

182. 509 U.S. at 231.

183. *Id.* at 249 (Stevens, J., dissenting).

similar understanding, stating that Brown & Williamson's net price to wholesalers was below its AVC for eighteen months, or that at any rate the Court assumed this to be a fact.[184] Perhaps our parenthetical was too elliptical and, because the jury verdict was general in nature, we might better have written: "(jury finding of liability sustainable on below-cost pricing issue)." If this is the most serious error in our article, as Elzinga and Mills's emphasis might suggest, we will settle for that.

CONCLUSION

In our previous article we urged the need for a strategic approach to predatory pricing because new economic learning has undercut the outmoded economic theory and badly flawed earlier empirical studies on which courts have relied. The modern economic teachings are reflected in a strategic understanding of predation that has been rigorously modeled, accepted as the consensus view in economics, and illuminated by sophisticated case studies identifying actual instances of predatory pricing. Accordingly, judicial skepticism toward predatory pricing, which today makes it all but impossible for a predatory pricing plaintiff to prevail in the federal courts, is no longer justified. To bridge the differences between modern economics and existing legal policy we have tried to explain the new economic insights in nontechnical terms to legal readers, to articulate workable legal rules that would incorporate these insights, and to illustrate application in examples drawn from actual cases.

Elzinga and Mills have enriched the literature by critically examining our effort and raising a series of specific objections to our proposal. In this Essay we answer these objections, showing that the modern economics of predatory pricing is suitable for legal application; that the specific implementations we propose would be effective; and that Elzinga and Mills's claimed counterexamples, in which the courts made no attempt to examine the facts within a modern strategic framework, provide no basis for evaluating—much less rejecting—the need and viability of a strategic approach.

Thus, Elzinga and Mills's conclusion that our proposed predatory pricing rule would systematically favor false convictions over false acquittals is unsupported. Moreover, Elzinga and Mills fail to sufficiently note two additional factors that would work to prevent false convictions. First, we insist throughout that the plaintiff prove by convincing factual evidence that the critical assumptions of the relevant strategic theory are present and that the conduct of the participants is consistent with that theory. Second, we have proposed a fully developed efficiencies defense, which would include both static and dynamic efficiencies and which is designed to protect the efficient aggressive firm from

184. *See* 3 AREEDA & HOVENKAMP, *supra* note 98, ¶ 726, at 260, 272.

predatory challenge. Therefore, contrary to Elzinga and Mills's claim, our proposed approach will not favor "stodgy oligopolists" over aggressive competitors. But neither will it favor dominant firm predators over small rivals and innovating new entrants by adhering to an underinclusive legal rule. Instead, our rule is designed to achieve so far as possible a regime that will be neither over- nor under-inclusive of predatory pricing.

APPENDIX: ELEMENTS OF PROOF OF PREDATORY STRATEGIES[185]

Financial Market Predation

(1) The prey depends on external financing.

(2) The prey's external financing depends on its initial performance.

(3) Predation reduces the prey's initial performance sufficiently to threaten the prey's continued financing and viability.

(4) The predator understands the prey's dependence on external financing.

(5) The predator can finance predation internally or has substantially better access to external credit than the prey.

Reputation Effect Predation

(1) The predator, a dominant multimarket firm, faces localized or product-limited competition or potential competition; or alternatively, operating within a single market, the predator faces probable successive entry over time.

(2) The alleged reputation effect either reinforces another identified predatory strategy pursued by the predator, such as financial market predation, or is based on the perceived probability that a predator who has once cut price in response to new entry is likely to repeat that conduct in the future.

(3) The predator deliberately pursues a reputation effect strategy.

(4) The potential entrant observes the exit or other adverse effect experienced by the predator's existing rival in the demonstration market; such knowledge is to be presumed if it is commonly known in the industry.

Test Market Predation

(1) The predator observes that the victim is attempting to enter a limited product or geographic market with a new product or brand.

(2) The predator cuts prices below cost on its own competing product or brand, either following or in anticipation of the victim's entry.

(3) The predator's price-cutting in the test market differs from its pricing conduct in other markets where it faces sustained competition.

(4) The price-cutting prevents the victim from learning about demand conditions under normal competitive conditions.

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185. Proof of a predatory pricing violation of course requires proof of the other elements as well. *See* Bolton, Brodley & Riordan, *supra* note 2, *passim*.

Cost-Signaling

(1) An event, or series of events, known by the victim, has occurred that could have enabled the predator to significantly reduce its variable costs.

(2) At or about the same time the predator significantly reduces its price.

(3) As a result of such price reduction, the victim could rationally believe the predator may have lowered its costs—for example in the past the predator has reduced its price when costs fell significantly.

(4) The possible cost reduction is of sufficient magnitude to require the victim to exit or to limit its expansion into other markets.